

**MICROFLUIDIC SYSTEM INCLUDING A VIRTUAL WALL FLUID INTERFACE PORT FOR INTERFACING FLUIDS WITH THE MICROFLUIDIC SYSTEM**

**Patent number:** EP1412729  
**Publication date:** 2004-04-28  
**Inventor:** BOEHM SEBASTIAN (NL); GILBERT JOHN (US)  
**Applicant:** CYTONOME INC (US)  
**Classification:**  
- **international:** B01D57/02; B01J19/00; B01L3/00; B01L3/02; C12Q1/00; G01N27/447; G01N35/10; B01D57/02; B01J19/00; B01L3/00; B01L3/02; C12Q1/00; G01N27/447; G01N35/10; (IPC1-7): G01N27/00; B01D57/02; B01F5/00; B01J19/00; B01L3/00; B01L3/02; C12Q1/68; G01N27/26; G01N27/447  
- **european:** B01D57/02; B01J19/00R; B01L3/00C6M; B01L3/02D; B01L3/02D2; C12Q1/00; G01N27/447B4; G01N27/447C5; G01N27/447C7

**Application number:** EP20020737579 20020620

**Priority number(s):** WO2002US19935 20020620; US20010299515P 20010620; US20010027171 20011221; US20010027484 20011221; US20010027516 20011221; US20010027922 20011221; US20010028852 20011221; US20010029108 20011221

**Also published as:**

- WO03000418 (A3)
- WO03000418 (A2)
- WO03000417 (A3)
- WO03000417 (A2)
- WO03000416 (A3)

[more >>](#)

**Cited documents:**

- WO0058724
- US6086825
- US6110332
- WO9915876

[Report a data error here](#)

Abstract not available for EP1412729

Abstract of corresponding document: [WO03000416](#)

A fluid interface port in a microfluidic system and a method of forming the fluid interface port is provided. The fluid interface port comprises an opening formed in the side wall of a microchannel sized and dimensioned to form a virtual wall when the microchannel is filled with a first liquid. The fluid interface port is utilized to fill the microchannel with a first liquid, to introduce a second liquid into the first liquid and to eject fluid from the microchannel.

Data supplied from the [esp@cenet](#) database - Worldwide

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
3 January 2003 (03.01.2003)

PCT

(10) International Publication Number  
**WO 03/000418 A2**

(51) International Patent Classification<sup>7</sup>: **B01L** [DE/NL]; Verbindingsweg 1, NL-2067 EH Bloemendaal (NL). **GILBERT, John** [US/US]; 69 Naples Road, Brookline, MA 02446 (US).

(21) International Application Number: PCT/US02/19935

(22) International Filing Date: 20 June 2002 (20.06.2002)

(74) Agents: **LAURENTANO, Anthony, A.** et al.; Lahive & Cockfield, LLP, 28 State Street, Boston, MA 02109 (US).

(25) Filing Language: English

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

(26) Publication Language: English

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(30) Priority Data:

60/299,515	20 June 2001 (20.06.2001)	US
10/027,171	21 December 2001 (21.12.2001)	US
10/027,484	21 December 2001 (21.12.2001)	US
10/027,516	21 December 2001 (21.12.2001)	US
10/027,922	21 December 2001 (21.12.2001)	US
10/028,852	21 December 2001 (21.12.2001)	US
10/029,108	21 December 2001 (21.12.2001)	US

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:

US 10/028,852 (CIP)  
Filed on 21 December 2001 (21.12.2001)

**Published:**

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(71) Applicant (*for all designated States except US*): **COVENTOR, INC.** [US/US]; 4001 Weston Parkway, Suite 200, Cary, NC 27513 (US).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **BOHM, Sebastian**

WO 03/000418 A2

(54) Title: MICROFLUIDIC SYSTEM INCLUDING A VIRTUAL WALL FLUID INTERFACE PORT FOR INTERFACING FLUIDS WITH THE MICROFLUIDIC SYSTEM

(57) Abstract: A fluid interface port in a microfluidic system and a method of forming the fluid interface port is provided. The fluid interface port comprises an opening formed in the side wall of a microchannel sized and dimensioned to form a virtual wall when the microchannel is filled with a first liquid. The fluid interface port is utilized to fill the microchannel with a first liquid, to introduce a second liquid into the first liquid and to eject fluid from the microchannel.